

THE BATTLE AGAINST COLORECTAL CANCER: A CALL TO ACTION

DANE THOMAS, PA-C, MMS

HEMATOLOGY/ONCOLOGY PHYSICIAN ASSISTANT

DALLAS, TX



DISCLOSURES

- NONE!

DISCLAIMER

- THIS LECTURE IS INTENDED FOR INFORMATIONAL PURPOSES ONLY. INDIVIDUALS SHOULD USE SOUND CLINICAL JUDGEMENT WHEN EVALUATING ALL PATIENTS WITH ONCOLOGICAL RELATED ISSUES AND ERR ON THE SIDE OF CAUTION WITH ANY PATIENT PRESENTING WITH POTENTIAL LIFE-THREATENING ONCOLOGICAL RELATED COMPLAINTS.

OBJECTIVES

- IDENTIFY AND DISCUSS EPIDEMIOLOGY, RATE OF OCCURRENCE, AND RISK FACTORS OF COLORECTAL CANCER.
- DISCUSS HOW COLORECTAL CANCER IS CURRENTLY DIAGNOSED
- IDENTIFY AND DISCUSS APPROPRIATE TREATMENT OPTIONS FOR PATIENTS DIAGNOSED WITH COLORECTAL CANCER AND DISCUSS HOW SOCIAL DETERMINANTS OF HEALTH CAN AFFECT COMPLIANCE WITH FOLLOW-UP AND TREATMENT
- DISCUSS WHAT'S IN THE PIPELINE FOR THE FUTURE IN COLORECTAL CANCER TREATMENTS
- DISCUSS COLORECTAL CANCER SURVIVORSHIP AND HOW ALL PRACTITIONERS CAN HELP
- DISCUSS CURRENT RECOMMENDATION ON SCREENING FOR COLORECTAL CANCER
- DISCUSS HOW TO COLLABORATE WITH YOUR ONCOLOGY COLLEAGUES WHEN FACED WITH A POTENTIAL COLORECTAL CANCER PATIENT.

CASE STUDY

- 29-YEAR-OLD AFRICAN AMERICAN MALE WITH MLH1 MUTATION ASSOCIATED WITH LYNCH SYNDROME PRESENTED TO THE ED WITH PROGRESSIVE ABDOMINAL PAIN, NAUSEA AND VOMITING, AND FEVERS OVER SEVERAL WEEKS. HE ALSO COMPLAINED OF LOOSE STOOLS AND 40-POUND UNINTENTIONAL WEIGHT LOSS OVER 1 YEAR.
- CT OF THE ABDOMEN REVEALED FOCAL WALL THICKENING WITH ADJACENT INFLAMMATION INVOLVING THE COLON AT THE HEPATIC FLEXURE. NUMEROUS ENLARGED LOW-DENSITY LYMPH NODES WERE NOTED WITHIN THE MID ABDOMINAL MESENTERY AND IN THE RETROPERITONEUM. SMALL AMOUNT OF ASCITES WAS NOTED.
- HE UNDERWENT COLONOSCOPY WHICH REVEALED A MALIGNANT PARTIALLY OBSTRUCTING TUMOR AT THE HEPATIC FLEXURE WHICH WAS BIOPSIED, 2 3-4 MM POLYPS IN THE RECTUM AND SIGMOID COLON WERE NOTED AND RESECTED. PATHOLOGY WAS CONSISTENT WITH POORLY DIFFERENTIATED ADENOCARCINOMA, HIGH-GRADE.
- HE UNDERWENT TOTAL COLECTOMY. PATHOLOGY REVEALED SIGNET RING CELL CARCINOMA INVOLVING THE TRANSVERSE COLON MEASURING 10 CM. MACROSCOPIC TUMOR PERFORATION WAS PRESENT. TUMOR WAS HIGH-GRADE INVADING THROUGH THE MUSCULARIS PROPRIA INTO THE SUBSEROUS ADIPOSE TISSUE BUT NOT EXTENDING TO THE SEROSAL SURFACE. MARGINS WERE CLEAR. LYMPHOVASCULAR AND PERINEURAL INVASION WERE NOTED. 35 REGIONAL LYMPH NODES WERE NEGATIVE FOR INVOLVEMENT. ONE PERIPANCREATIC LYMPH NODE WAS RESECTED AND POSITIVE FOR METASTATIC CARCINOMA.
- MSI TESTING BY IHC REVEALED LOSS OF NUCLEAR EXPRESSION OF MLH1 AND PMS-2. K-RAS, PIK3CA, BRAF, AND NRAS WERE ALL WILD TYPE.

CASE STUDY (CONTINUED)

- PET SCAN REVEALED DIFFUSE METASTATIC DISEASE INVOLVING CERVICAL, SUPRACLAVICULAR, MEDIASTINAL, AND RETROPERITONEAL ADENOPATHY. 4.1 CM PANCREATIC HEAD MASS WAS NOTED AS WELL AS SUBCENTIMETER PULMONARY NODULES SUSPICIOUS FOR EARLY METASTATIC PULMONARY DISEASE.
- HE INITIATED FIRST-LINE PEMBROLIZUMAB AND COMPLETED 2 YEARS OF THERAPY.
- HE WAS FOUND TO HAVE NO EVIDENCE OF DISEASE BASED ON FOLLOW UP SCANS FOR 3 YEARS AFTER BEING DIAGNOSED
- HE DEVELOPED NEW ONSET RIGHT BACK PAIN.
- CT NECK, CHEST, ABDOMEN, AND PELVIS WAS PERFORMED AND SIGNIFICANT FOR PROGRESSIVE RETROPERITONEAL ADENOPATHY ABUTTING BOTH THE IVC AND ADJACENT PSOAS MUSCULATURE MEASURING APPROXIMATELY 3.3 x 3.0 CM. CT WAS OTHERWISE STABLE.
- UNDERWENT FERTILITY PRESERVATION VIA SPERM BANKING AND THEN RESUMED PEMBROLIZUMAB COMPLETING 18 MONTHS OF TREATMENT.
- SIGNATERA CTDNA INCREASED FROM 49.17 TO 335.52 MTM PER ML. FOLLOW UP CT SCAN REVEALED PROGRESSION.
- SWITCHED TO DOSTARLIMAB-GXLY AND RECEIVED 6 CYCLES

CASE STUDY (CONTINUED)

- PET SCAN REVEALED PROGRESSION OF DISEASE IN THE PARATRACHEAL AND RETROPERITONEAL LYMPH NODES.
- HE WAS STARTED ON FOLFIRINOX AND BEVACIZUMAB. HE COMPLETED 4 CYCLES.
- FOUND TO HAVE PROGRESSION.
- SWITCHED TO IPILIMUMAB AND NIVOLUMAB X 4 CYCLES FOLLOWED BY MAINTENANCE NIVOLUMAB FOR 3 MONTHS
- HE ENROLLED IN MD ANDERSON CLINICAL TRIAL.
- WAS FOUND TO HAVE PROGRESSION OF DISEASE 2 MONTHS LATER. HE WAS NOT ELIGIBLE FOR ANY CLINICAL TRIALS AT THE TIME. HIS HEALTH DETERIORATED RAPIDLY AND ELECTED TO ENROLL IN HOSPICE CARE.
- HE PASSED AWAY AT THE AGE OF 36.

COLORECTAL CANCER BASICS

- EPIDEMIOLOGY

- HIGHEST INCIDENCE IN AUSTRALIA, NEW ZEALAND, EUROPE, AND NORTH AMERICA
- LOWEST RATES FOUND IN AFRICA AND SOUTH-CENTRAL ASIA
- LARGER INCIDENCE OF RIGHT SIDED OR PROXIMAL COLON CANCERS

- UNITED STATES

- LIFETIME INCIDENCE WITH PATIENTS AT AVERAGE RISK IS 4%
- HIGHER INCIDENCE IN MALES THAN IN FEMALES
- HIGHER INCIDENCE IN AFRICAN-AMERICAN DESCENT THAN IN CAUCASIAN DESCENT

- AGE

- UNCOMMON BEFORE 40
- INCIDENCE INCREASES SIGNIFICANTLY BETWEEN 40 – 50, THEN INCIDENCE RATES INCREASE IN EACH SUCCEEDING DECADE
- US: NEW CRC CASES UNDER AGE 55 INCREASED FROM 11% TO 20% BETWEEN 1995 AND 2019

- ANAL CANCER

- RISING RATES IN FEMALES ABOVE THE AGE OF 50
- HIGHER INCIDENCE IN MALES HAVING SEX WITH OTHER MALES AND THOSE WITH HIV

COLORECTAL CANCER BASICS

- RISK FACTORS
 - HEREDITARY SYNDROMES
 - ESTIMATED THAT UP TO 35% OF YOUNG ADULT CRC
 - METABOLIC DYSREGULATION
 - OBESITY, METABOLIC SYNDROME, RED MEAT INTAKE, HTN, HYPERLIPIDEMIA, DM (38% HIGHER RISK), SEDENTARY BEHAVIOR
 - HISTORY OF CRC IN FIRST DEGREE RELATIVE
 - HEAVY ALCOHOL CONSUMPTION
 - TOBACCO USE
 - LACK OF REGULAR USE OF NSAIDS
 - VITAMIN D INTAKE
 - PROTECTIVE?
 - ANAL CANCER: HPV, HIV, RECEPTIVE ANAL INTERCOURSE, GENITAL WARTS, AND CIGARETTE SMOKING

DIAGNOSIS OF COLORECTAL CANCER

- CLINICAL PRESENTATION

- ASYMPTOMATIC

- EARLY STAGE COLON CANCER

- SYMPTOMATIC

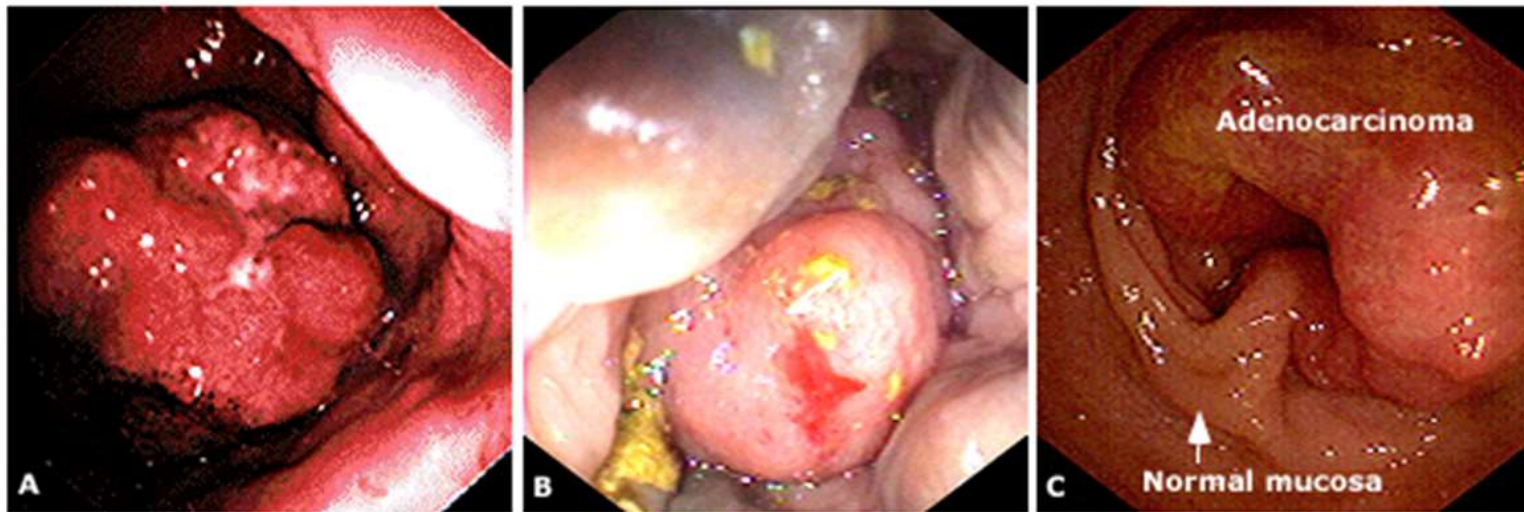
- 70% – 90% OF CASES
 - HEMATOCHEZIA
 - MELENA
 - ABDOMINAL PAIN
 - UNEXPLAINED IRON DEFICIENCY
 - MORE COMMON IN RIGHT SIDED COLON CANCERS
 - SUDDEN CHANGE IN BOWEL HABITS
 - MORE COMMON IN LEFT SIDED COLON CANCERS
 - ABDOMINAL DISTENSION/SYMPTOMS OF BOWEL OBSTRUCTION
 - RECTAL PAIN, TENESMUS, AND DECREASED CALIBER OF STOOLS

DIAGNOSIS OF COLORECTAL CANCER

- ENDOSCOPIC EXAMINATION
 - COLONOSCOPY
 - MOST ACCURATE AND VERSATILE DIAGNOSTIC TEST (LOCATE AND BIOPSY)
 - FLEXIBLE SIGMOIDOSCOPY
 - DOES NOT VISUALIZE THE RIGHT SIDE OF COLON
- IMAGING
 - CT SCAN OF THE CHEST, ABDOMEN, AND PELVIS WITH IV AND PO CONTRAST
 - RECOMMENDED FOR STAGE II OR HIGHER
 - PRIOR TO SURGERY
 - PET SCAN
 - NO ADDED BENEFIT COMPARED TO CT PREOPERATIVELY
 - BARIUM ENEMA
 - RARELY USED
 - RECTAL CANCER
 - DIGITAL RECTAL EXAMINATION, RIGID SIGMOIDOSCOPY, TRANSRECTAL ULTRASOUND, TRANSRECTAL ENDOSCOPIC ULTRASOUND, AND PELVIC MRI

DIAGNOSIS OF COLORECTAL CANCER

Adenocarcinoma of the colon



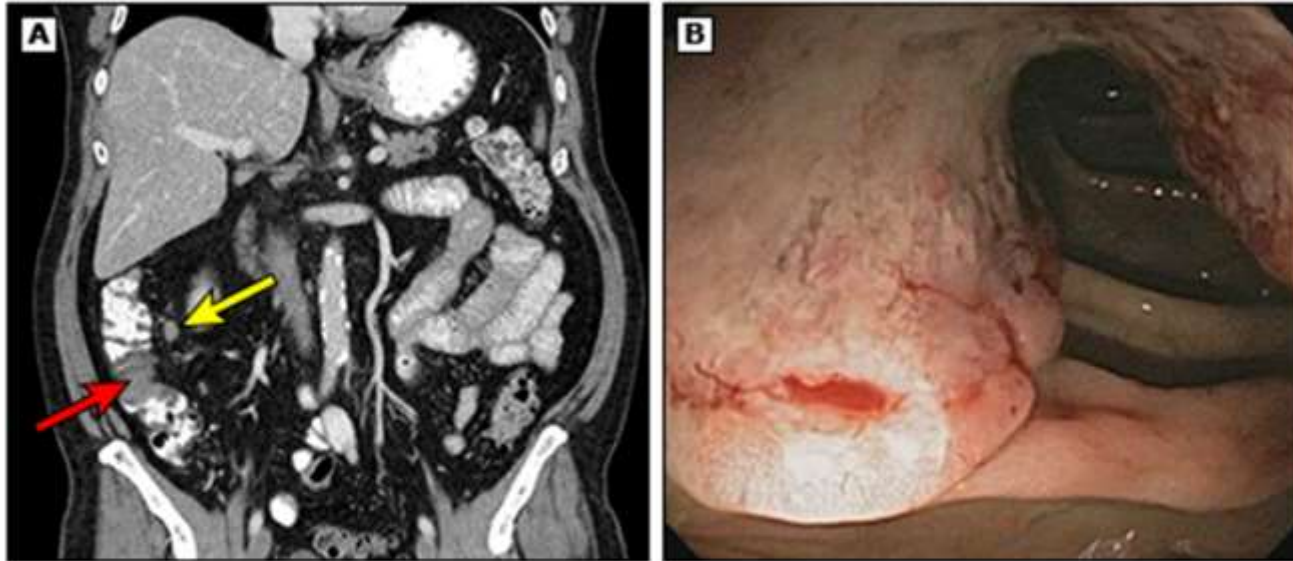
Adenocarcinoma of the colon may have a variety of appearances on endoscopy. Panel A: a typical exophytic mass; Panel B: a friable polypoid mass; Panel C: circumferential adenocarcinoma.

Courtesy of James B McGee, MD.

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DIAGNOSIS OF COLORECTAL CANCER

Colon cancer seen on CT scan and colonoscopy



(A) Computed tomographic (CT) scan showing a filling defect in the ascending colon (red arrow) along with an involved lymph node (yellow arrow).

(B) Colon cancer identified in the ascending colon on subsequent colonoscopy.

DIAGNOSIS OF COLORECTAL CANCER

Cancer of the colon as seen on barium enema

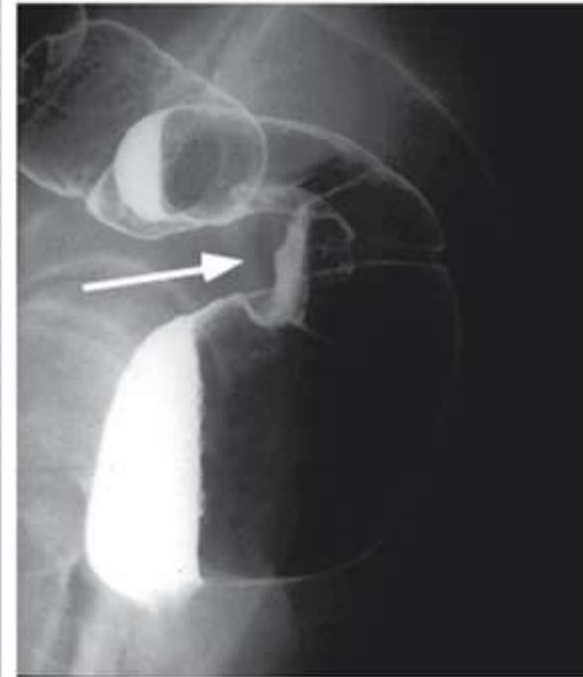


Double contrast barium enema shows an apple-core lesion surrounding the lumen of the descending colon.

Courtesy of Jonathan Kruskal, MD.

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Rectal cancer as seen on barium enema



Double-contrast barium enema shows an eccentric mass arising from the anterior wall of the rectum (arrow).

Courtesy of Jonathan Kruskal, MD, PhD.

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DIAGNOSIS OF COLORECTAL CANCER

- PATHOLOGY
 - COLORECTAL CANCER
 - MOST ARE ADENOCARCINOMAS
 - SIGNET RING CELL CARCINOMAS: POOR PROGNOSIS
 - MEDULLARY ADENOCARCINOMA: FAVORABLE PROGNOSIS (ASSOCIATED WITH DEFICIENT MISMATCH REPAIR (MMR))
 - RARE PATHOLOGY: NEUROENDOCRINE NEOPLASMS, HAMARTOMAS, MESENCHYMAL TUMORS, LYMPHOMAS
 - MOLECULAR FEATURES
 - MISMATCH REPAIR DEFICIENCY
 - RAS (KRAS, NRAS), BRAF AND EGFR
 - ANAL CANCER
 - MAJORITY ARE SQUAMOUS CELL CARCINOMA
 - UP TO 93% OF SCC ASSOCIATED WITH HPV INFECTION
 - HPV 16: MOST FREQUENT ASSOCIATED TYPE

COLORECTAL CANCER ARSENAL

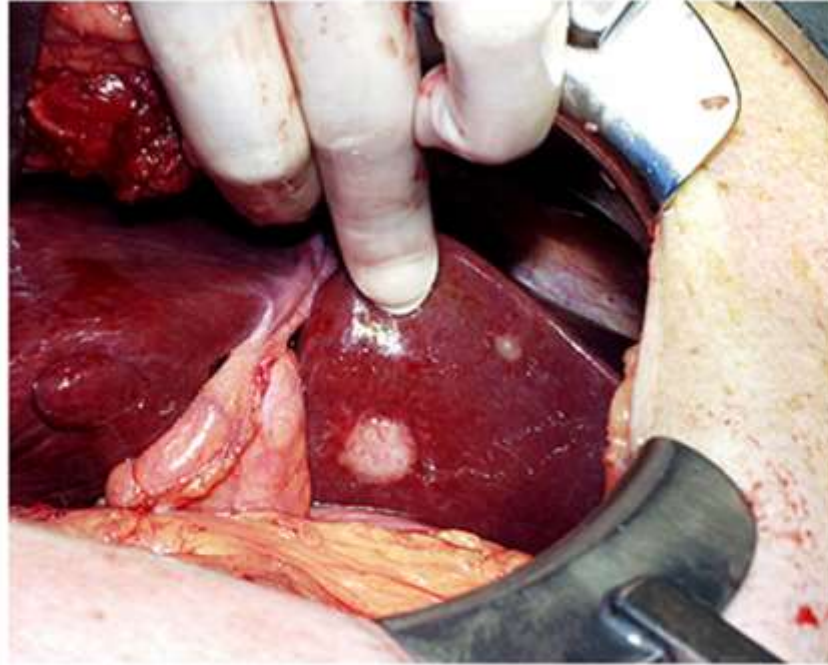
- SURGERY
- RADIATION THERAPY
- SYSTEMIC THERAPIES
 - CHEMOTHERAPY
 - ORAL
 - IV
 - BIOLOGICS
 - IMMUNOTHERAPY
 - TARGETED THERAPY

COLORECTAL CANCER ARSENAL

- SURGERY
 - COLON CANCER
 - 80% OF CANCERS ARE LOCALIZED TO COLON WALL AND/OR REGIONAL NODES
 - ENDOSCOPIC RESECTION (POLYPECTOMY)
 - LAPAROSCOPIC-ASSISTED COLECTOMY
 - NOT OBSTRUCTED OR PERFORATED, NON-LOCALLY ADVANCED, NOT HAD PRIOR EXTENSIVE ABDOMINAL SURGERY
 - OPEN COLECTOMY
 - RESERVED FOR COMPLICATED COLON CANCERS
 - MAY NEED OSTOMY
 - COLONIC PERFORATION/OBSTRUCTION
 - REGIONAL LYMPHADENECTOMY (AT LEAST 12 LYMPH NODES)
 - MULTIVISCERAL RESECTION
 - LOCALLY ADVANCED CRC (INVASION OF CONTIGUOUS ORGANS)
 - METASTATIC DISEASE
 - SURGERY ONLY INDICATED FOR ISOLATED RESECTABLE METASTATIC DISEASE
 - RECTAL CANCER
 - CURATIVE FOR ONLY STAGE 1
 - LIKELY WILL RECEIVE PREOPERATIVE CHEMOTHERAPY AND RADIATION OR RADIATION ONLY FOR ADVANCED STAGES

COLORECTAL CANCER ARSENAL

Metastatic colon cancer



Multiple liver metastases seen during laparotomy in a patient with colon cancer.

Courtesy of Richard B Freeman, Jr, MD.

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COLORECTAL CANCER ARSENAL

- RADIATION
 - NOT INDICATED FOR COMPLETELY RESECTED COLON CANCER
 - RECTAL CANCER
 - USED IN CONJUNCTION WITH CHEMOTHERAPY PRE AND/OR POSTOPERATIVELY

COLORECTAL CANCER ARSENAL

- SYSTEMIC THERAPIES
 - CHEMOTHERAPY
 - ORAL & IV
 - 5-FU AND LEUCOVORIN
 - TYPICALLY USED IN CONJUNCTION WITH XRT FOR RECTAL CANCER
 - MAIN SIDE EFFECTS: STOMATITIS, HAND-FOOT SYNDROME, LEUKOPENIA
 - NO HAIR LOSS
 - FOLFOX
 - 5-FU, LEUCOVORIN, AND OXALIPLATIN
 - MAIN BACKBONE FOR ADJUVANT THERAPY FOR STAGE II/III COLORECTAL CANCER AS WELL AS METASTATIC CANCER
 - MAIN SIDE EFFECTS: ORAL MUCOSITIS, HAND-FOOT SYNDROME, NAUSEA, COLD DYSESTHESIAS, PERIPHERAL NEUROPATHY
 - NO HAIR LOSS

COLORECTAL CANCER ARSENAL

- SYSTEMIC THERAPIES
 - CHEMOTHERAPY
 - ORAL & IV
 - CAPECITABINE +/- OXALIPLATIN
 - ORAL OPTION THAT CAN REPLACE 5-FU PUMP
 - MAIN SIDE EFFECTS: ORAL MUCOSITIS, HAND-FOOT SYNDROME, NAUSEA, DIARRHEA
 - NO HAIR LOSS
 - FOLFOXIRI/FOLFIRINOX
 - 5-FU, LEUCOVORIN, IRINOTECAN AND OXALIPLATIN
 - MAIN SIDE EFFECTS: SIGNIFICANT DIARRHEA, HAIR LOSS, NAUSEA, VOMITING, LEUKOPENIA

COLORECTAL CANCER ARSENAL

- SYSTEMIC THERAPIES
 - IMMUNOTHERAPY
 - MONOCLONAL ANTIBODIES
 - BEVACIZUMAB
 - PANITUMUMAB/CETUXIMAB
 - IMMUNE CHECKPOINT INHIBITORS
 - NIVOLUMAB/IPILIMUMAB
 - PEMBROLIZUMAB
 - DOSTARLIMAB

COLORECTAL CANCER ARSENAL

- SYSTEMIC THERAPIES

- IMMUNOTHERAPY

- MONOCLONAL ANTIBODIES

- BEVACIZUMAB

- MECHANISM OF ACTION: BINDS TO AND NEUTRALIZES VASCULAR ENDOTHELIAL GROWTH FACTOR (VEGF), PREVENTING ITS ASSOCIATION WITH ENDOTHELIAL RECEPTORS, FLT-1 AND KDR. PREVENTS THE FORMATION OF NEW BLOOD VESSELS.

- MAIN SIDE EFFECTS: HYPERTENSION, PROTEINURIA, BLEEDING, CLOTTING, BOWEL PERFORATION, DELAYED WOUND HEALING

- PANITUMUMAB/CETUXIMAB

- INDICATED FOR WILD-TYPE KRAS AND EGFR POSITIVE COLORECTAL CANCER

- MAIN SIDE EFFECTS: DIARRHEA, ACNIFORM RASH, PARONYCHIA, STOMATITIS

COLORECTAL CANCER ARSENAL

- SYSTEMIC THERAPIES

- IMMUNOTHERAPY

- IMMUNE CHECKPOINT INHIBITORS

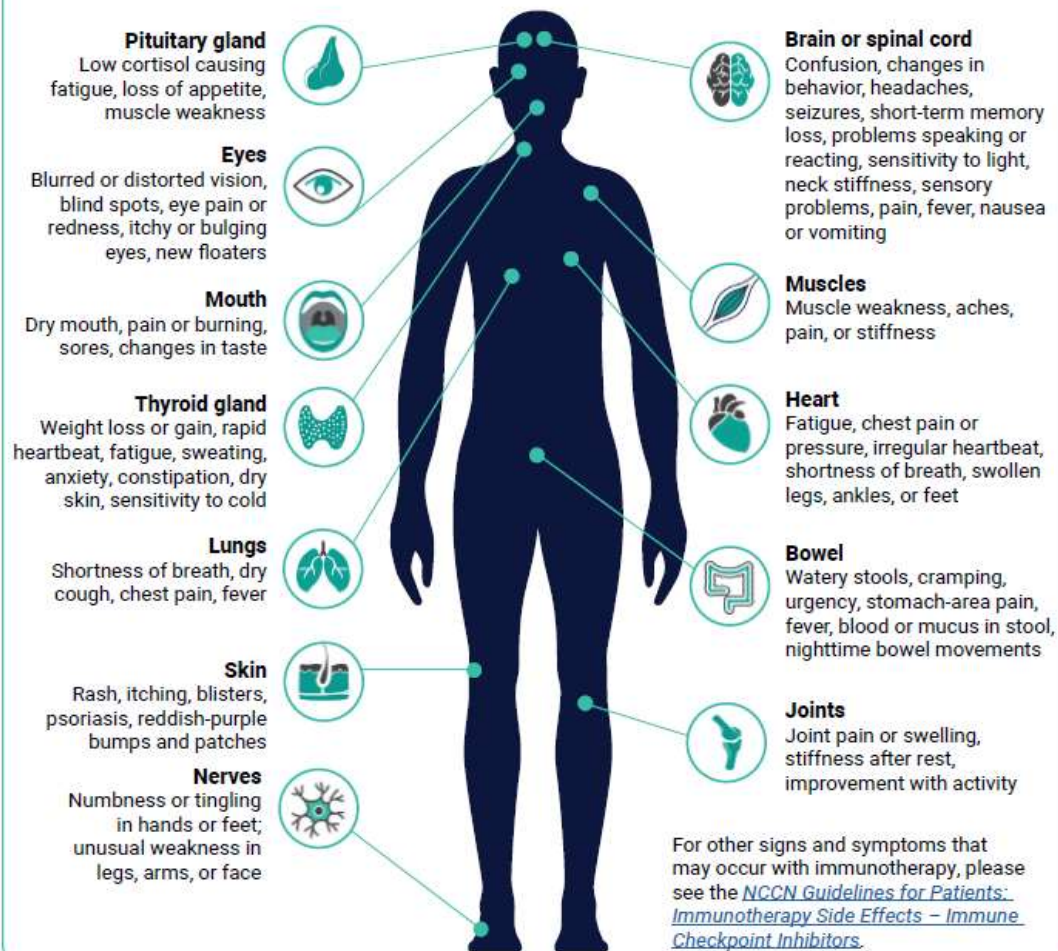
- NIVOLUMAB/IPILIMUMAB/PEMBROLIZUMAB/DOSTARLIMAB
- USED IN MISMATCH REPAIR-DEFICIENT (dMMR) OR MICROSATELLITE INSTABILITY-HIGH (MSI-H) COLORECTAL CANCER
- OFTEN GIVEN IN CONJUNCTION WITH 5-FU REGIMEN
- IMMUNE RELATED TOXICITIES: MYOCARDITIS/PERICARDITIS, DERMATITIS, COLITIS, PNEUMONITIS, THYROIDITIS (HYPO AND HYPERTHYROIDISM), ADRENAL INSUFFICIENCY, NEPHROTOXICITY, HEPATITIS
- TREATMENT: PREDNISONE 0.5 TO 1 MG/KG/DAY TAPER IF SYMPTOMS ARE SEVERE



Understanding Immunotherapy Side Effects

Immune checkpoint inhibitors (a type of immunotherapy) offer a promising new way to treat certain cancers. But these medicines can cause your immune system to attack normal organs and tissues in your body, affecting the way they work. Serious side effects typically occur in less than 5% of patients, but certain mild side effects can occur in up to 30% – 50% of patients.

Contact your health care provider right away if you think you may be experiencing ...



COLORECTAL CANCER ARSENAL

- TARGETED THERAPIES
 - TRIFLURIDINE AND TIPIRACIL
 - DISRUPT CELL REPLICATION BY INCORPORATING ITSELF INTO DNA LEADING TO CELL DEATH AND INHIBITS THE ENZYME THYMIDINE PHOSPHORYLASE, WHICH BREAKS DOWN TRIFLURIDINE
 - MAIN SIDE EFFECTS: FEVER, LEUKOPENIA, FATIGUE, NAUSEA, ANOREXIA, DIARRHEA
 - REGORAFENIB
 - ORAL MULTIKINASE INHIBITOR THAT TARGETS VARIOUS PATHWAYS INVOLVED IN CANCER GROWTH AND SPREAD.
 - MAIN SIDE EFFECTS: ELEVATED LFTs, BLEEDING, HAND-FOOT SYNDROME, SKIN RASH, HYPERTENSION, BOWEL PERFORATION

COLORECTAL CANCER ARSENAL

- HER-2 TARGETED THERAPIES
 - TRASTUZUMAB
 - OFTEN GIVEN IN CONJUNCTION WITH 5-FU REGIMEN
 - HER-2 POSITIVE COLORECTAL CANCERS

COLORECTAL CANCER ARSENAL SIDE EFFECTS

Acral erythema



Acral erythema of the hand.

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Acral erythema



Bilateral erythema is present on the hands in this patient with acral erythema.

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COLORECTAL CANCER ARSENAL SIDE EFFECTS

Chemotherapy-related mucositis



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COLORECTAL CANCER ARSENAL SIDE EFFECTS

Acneiform eruption secondary to EGFR inhibitor therapy



Diffuse, erythematous, follicular papules on the back of this patient treated with gefitinib.

EGFR: epidermal growth factor receptor.

Courtesy of Aimee S Payne, MD, PhD.

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Acneiform eruption secondary to treatment with EGFR inhibitors



Diffuse, discrete, confluent, tiny pustules with hemorrhagic crusts on the forehead of a patient on an EGFR inhibitor with colon cancer.

EGFR: epidermal growth factor receptor.

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EGFR inhibitor paronychia



Paronychia of the great toe secondary to cetuximab therapy.

EGFR: epidermal growth factor receptor.

Courtesy of Aimee S Payne, MD, PhD.

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NUTRITION DURING TREATMENT

- PODCAST EPISODE ON NUTRITION RECOMMENDATIONS FOR PATIENTS RECEIVING CANCER TREATMENT
 - EXAM ROOM NUTRITION
 - [HTTPS://PODCASTS.APPLE.COM/US/PODCAST/56-ASK-THE-DIETITIAN-CANCER-NUTRITION-STRATEGIES/ID1696017800?I=1000657152186](https://podcasts.apple.com/us/podcast/56-ask-the-dietitian-cancer-nutrition-strategies/id1696017800?i=1000657152186)
 - EPISODE 56

COLORECTAL CANCER SURVIVORSHIP

- COMMON ISSUES
 - PERIPHERAL NEUROPATHY
 - PHYSICAL AND OCCUPATIONAL THERAPY
 - MEDICATIONS (DULOXETINE)
 - CHRONIC DIARRHEA
 - CONSIDER GI CONSULT TO RULE OUT OTHER POSSIBLE ETIOLOGIES
 - FATIGUE
 - COGNITIVE CHANGES
 - OSTOMY ISSUES
 - SEXUALITY
- PODCAST EPISODE ON NUTRITION DURING CANCER SURVIVORSHIP
 - **EXAM ROOM NUTRITION**
 - [HTTPS://PODCASTS.APPLE.COM/US/PODCAST/57-ASK-THE-DIETITIAN-CANCER-SURVIVORSHIP-AND-NUTRITION/ID1696017800?I=1000657272353](https://podcasts.apple.com/us/podcast/57-ask-the-dietitian-cancer-survivorship-and-nutrition/id1696017800?i=1000657272353)
 - EPISODE 57

COLORECTAL CANCER SCREENING

- COLONOSCOPY
 - US PREVENTIVE SERVICES TASK FORCE (USPSTF) RECOMMENDS INITIATING SCREENING AT AGE 45 AND END AT AGE 75
 - COLONOSCOPY EVERY 10 YEARS OR SOONER IF COLON POLYPS ARE REMOVED
 - *EFFECT OF COLONOSCOPY SCREENING ON RISKS OF COLORECTAL CANCER AND RELATED DEATH*
 - NORDICC TRAIL: FIRST RANDOMIZED CONTROLLED TRIAL
- FLEXIBLE SIGMOIDOSCOPY
 - CHEAPER ALTERNATIVE TO COLONOSCOPY FOR SCREENING
 - INCREASING INCIDENCE OF LEFT SIDED AND RECTAL CANCERS WITH EARLY STAGE CRC
 - *REANALYSIS OF ALL-CAUSE MORTALITY IN THE USPSTF 2016 EVIDENCE REPORT ON COLORECTAL CANCER SCREENING*
 - FLEX SIG ONLY SCREENING TOOL THAT PROVIDES ALL-CAUSE MORTALITY BENEFIT
- PILLCAM ENDOSCOPY: APPROVED FOR PATIENTS WITH INCOMPLETE COLONOSCOPY
- CT COLONOGRAPHY (VIRTUAL COLONOSCOPY): PERFORMED EVERY 5 YEARS
- MULTITARGET STOOL DNA TESTING (COLOGUARD)
 - COMBINES FECAL MARKERS FOR HEMOGLOBIN AND DNA MUTATION AND METHYLATION
 - USPSTF RECOMMENDS SCREENING EVERY 1 – 3 YEARS
- FECAL IMMUNOCHEMICAL TEST (FIT): ANNUAL TESTING

HEREDITARY COLORECTAL CANCER

- FAMILIAL ADENOMATOUS POLYPOSIS (FAP) AND LYNCH SYNDROME (HEREDITARY NONPOLYPOSIS COLORECTAL CANCER (HNPCC))
 - MOST COMMON
 - 5% OF CRC CASES (8% OF CASES UNDER AGE OF 50)
- FAMILY HISTORY
 - SINGLE AFFECTED FIRST DEGREE RELATIVE WITH CRC INCREASES RISK BY ALMOST TWOFOLD (HIGHER IF DIAGNOSED < 50 YEARS OLD)
 - NO STANDARD GUIDELINES FOR SCREENING

HEREDITARY COLORECTAL CANCER

- LYNCH SYNDROME
 - DISEASE-CAUSING DEFECT IN ONE OF THE DNA MISMATCH REPAIR (MMR) GENES, MOST COMMONLY HMLH1, HMSH2, HMSH6, OR HPMS2
 - CRC: EARLY AGE OF ONSET (AVERAGE AGE 48) AND MOSTLY RIGHT SIDED
 - INCREASED RISK OF OVARIAN, GASTRIC, SMALL BOWEL, HEPATOBILIARY, BRAIN, RENAL/URETER CANCERS
 - WHEN TO SUSPECT
 - CRC OR ENDOMETRIAL CANCER PRIOR TO 50, CRC TUMOR HAS DEFICIENT MISMATCH REPAIR (MMR), FH OF COLON, ENDOMETRIAL, OVARIAN, OR GASTRIC CANCERS
 - GERMLINE TESTING TO CONFIRM DIAGNOSIS
 - TESTING IN CHILDREN SHOULD BE OFFERED 10 YEARS BEFORE THE EARLIEST AGE OF CANCER ONSET IN THE FAMILY OR BY AGE 20 TO 30 YEARS
 - SCREENING RECOMMENDATIONS
 - CRC
 - MLH1 AND MSH2: COLONOSCOPY EVERY 1 – 2 YEARS BEGINNING AGE 20 – 25
 - MSH6 AND PMS2 CARRIERS: COLONOSCOPY EVERY 1 – 3 YEARS BEGINNING AGE 30 – 35
 - CRC RISK REDUCTION: ASPIRIN 81 OR 325 MG DAILY

WORKING WITH YOUR ONCOLOGY TEAM

- IT IS IMPORTANT TO PERFORM APPROPRIATE COLON CANCER SCREENING FOR PATIENTS
 - IDENTIFY HIGH RISK PATIENTS AND ADJUST COLON CANCER SCREENING AS APPROPRIATE
 - CONSIDER GENETIC TESTING
- ASSIST ONCOLOGY TEAM WITH MANAGING CHRONIC DISEASES
- FOR YOUR METASTATIC PATIENTS, IT IS IMPORTANT TO HAVE THEM UNDERSTAND THAT THEIR CANCER IS TREATABLE, BUT NOT CURABLE
 - LOOKING AT THEIR CANCER AS A CHRONIC DISEASE
 - DISCUSS PALLIATIVE CARE AND IF APPROPRIATE, HOSPICE. ALSO DISCUSS COMPLETING THEIR MEDICAL POWER OF ATTORNEY (MPOA) AND LIVING WILL DOCUMENTS
- AVOID UNNECESSARY ER VISITS FOR YOUR PATIENTS
 - ARRANGE FOR OUTPATIENT IV HYDRATION IF DEHYDRATION IS AN ISSUE
 - MONITOR PAIN LEVEL DURING TREATMENT AND PRESCRIBE PAIN MEDICATION WHEN APPROPRIATE

SOCIAL DETERMINANTS OF HEALTH

- PATIENTS WITH CONCERNS FOR CANCER ARE OFTEN OVERLOOKED DUE TO VARIOUS SOCIAL DETERMINANTS OF HEALTH
 - SOCIOECONOMIC STATUS
 - LACK OF INSURANCE/UNDERINSURED MAY LIMIT ACCESS TO NECESSARY LABS/FOLLOW UP EVALUATIONS LEADING TO MISSED OR MISDIAGNOSED HEALTH CONDITIONS
 - ACCESS TO HEALTHCARE
 - PATIENTS LIVING IN RURAL OR UNDERSERVED AREAS LIKELY WILL NOT HAVE EASY ACCESS TO A HEMATOLOGY/ONCOLOGY PROVIDER
 - SUPPORT NETWORK
 - PATIENTS WHO LACK FAMILY AND COMMUNITY SUPPORT MAY STRUGGLE WITH ATTENDING THEIR APPOINTMENTS, LIMITING THEIR CARE

RESOURCES

- PODCAST EPISODE ON PALLIATIVE CARE, HOSPICE, AND END OF LIFE CARE
 - **THE PA PLAYBOOK PODCAST**
 - *BECAUSE I COULD NOT STOP FOR DEATH: END OF LIFE CARE AND DEATH WITH DIGNITY*
 - SEPTEMBER 2024





REFERENCES

- GLOBAL CANCER OBSERVATORY. INTERNATIONAL AGENCY FOR RESEARCH ON CANCER. WORLD HEALTH ORGANIZATION. AVAILABLE AT: [HTTPS://GCO.IARC.FR/](https://gco.iarc.fr/)
- STOFFEL EM, PB, GRUBER SB, ET AL. HEREDITARY COLORECTAL CANCER SYNDROMES: AMERICAN SOCIETY OF CLINICAL ONCOLOGY CLINICAL PRACTICE GUIDELINE ENDORSEMENT OF THE FAMILIAL RISK-COLORECTAL CANCER: EUROPEAN SOCIETY FOR MEDICAL ONCOLOGY CLINICAL PRACTICE GUIDELINES. J CLIN ONCOL 2015; 33:209. NATIONAL COMPREHENSIVE CANCER NETWORK (NCCN). NCCN CLINICAL PRACTICE GUIDELINES IN ONCOLOGY. AVAILABLE AT: [HTTPS://WWW.NCCN.ORG/](https://www.nccn.org/)
- “HAND-FOOT SYNDROME.” CHEMOCARE: CARE DURING CHEMO AND BEYOND, 2013. WEB. APR. 2013. [HTTP://CHEMOCARE.COM/CHEMOTHERAPY/SIDE-EFFECTS/HANDFOOT-SYNDROME.ASPX](http://chemocare.com/chemotherapy/side-effects/handfoot-syndrome.aspx).
- VOGEL JD, FELDER SI, BHAMA AR, ET AL. THE AMERICAN SOCIETY OF COLON AND RECTAL SURGEONS CLINICAL PRACTICE GUIDELINES FOR THE MANAGEMENT OF COLON CANCER. DIS COLON RECTUM 2022; 65:148.
- CHALABI M, FANCHI LF, DIJKSTRA KK, ET AL. NEOADJUVANT IMMUNOTHERAPY LEADS TO PATHOLOGICAL RESPONSES IN MMR-PROFICIENT AND MMR-DEFICIENT EARLY-STAGE COLON CANCERS. NAT MED 2020; 26:566.
- CHIOREAN EG, NANDAKUMAR G, FADELU T, ET AL. TREATMENT OF PATIENTS WITH LATE-STAGE COLORECTAL CANCER: ASCO RESOURCE-STRATIFIED GUIDELINE. JCO GLOB ONCOL 2020; 6:414.

THANKS FOR LISTENING!

QUESTIONS, COMMENTS, SUGGESTIONS?

PLEASE EMAIL ME AT:

DANETHOMASPA@GMAIL.COM

OR

DM ME ON LINKEDIN

WWW.LINKEDIN.COM/IN/DANE-THOMAS-PAC